Working Group 2

The Protected Resources Vision - Protected Species Studies with An Ecosystem Component

Q1: Characteristics of a region-specific national program

- **Reference document**
  - **describing system, species, goals, data gaps**
  - **Non-technical**
- ***Stable* long-term monitoring**
  - **Protected species, predators and prey**
  - **Perturbations: fishing, noise, disease, climate**
- **Regular process studies**
  - **Targeted at management needs**
  - **Flexible**
- **Model development**
  - **Regular revision based on new knowledge**
  - **Quantify and communicate uncertainty**
- **Coordination**
  - **Within NOAA, between agencies**
  - **With stakeholders**

Q2: Experiences which demonstrate how this approach would inform ecosystem based protected species management

- There are some good examples of “ecosystem scope” protected species programs that can serve as examples;
- Eastern Tropical Pacific Tuna / Dolphin Ecosystem Studies – Good effort to collect environmental data along with focal species data
- Northeast Atlantic right whale studies – focal species data and environmental data collected separately and must be integrated after the fact – not ideal
- Pacific Northwest salmon recovery efforts – good representation of all relevant ecosystem and social & economic components represented

Q2: Experiences which demonstrate how this approach would inform ecosystem based protected species management

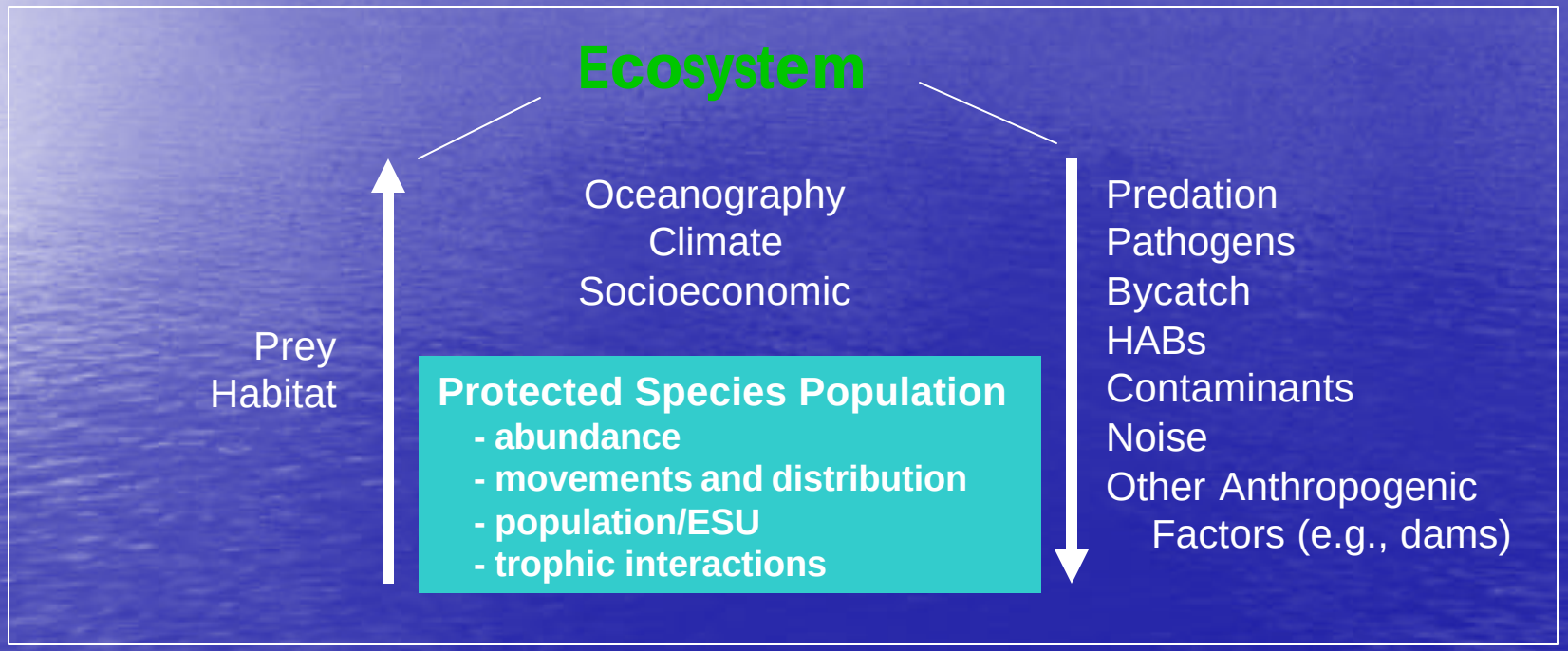
- Issues of scale:
  - Ecosystem area needs to match the species in question (e.g., elephant reserves need to be large)
  - Most protected species ecosystems are large like their ranges (i.e., bigger than NOAA 8 – REAs)
  - Some important protected species areas are not included in NOAA REAs (i.e., Eastern Tropical Pacific, Antarctic, Great Lakes)
  - While focused on key species, these areas must be managed as entire “ecosystems” inclusive of all species and habitats

Q2: Experiences which demonstrate how this approach would inform ecosystem based protected species management

- Ecosystem management of large areas can result in conflicts:
  - Southern resident killer whales (listed species) feed on depleted Northwest Pacific salmon (also listed) – how do we manage for one species without jeopardizing others?

Q3: Research, data, models, and information management

Conceptual Model



Q3: Research, data, models, and information management

- Tools:
  - Remote sensing (satellite and buoy sensing including physical and biological features, and including tags)
  - Remote health assessment (genomics, proteomics, visual)
  - Ecosystem process cruises and large-scale experiments
  - Increased collaboration and partnerships
  - Information systems and data management
  - Analytical tools
  - Models

Q3: Research, data, models, and information management

- Information Systems & Data Management
  - Establish metadata standards
  - Establish data sharing agreements and structure to facilitate data sharing
  - Dedicated database managers
  - Databases linked to GIS and models for further analysis (multi-criteria evaluation)

Q3: Research, data, models, and information management

- Modeling
  - Expand and strengthen in-house modeling capacity
  - Develop risk-based models with probabilistic output to support management
  - Draw from modeling experience from other disciplines and environments (terrestrial, economics, climates, disease, acoustic), including integration of existing complementary models (e.g., biochemical, trophic)
  - Develop “metadata” for models to ensure reproducibility (e.g., assumptions and initial conditions)
  - Develop a set of criteria for validating models

Q3: Research, data, models, and information management

- Data Needs
  - Iterative approach to management, data collection and analysis
- Communication
  - Better communication of results to researchers, management, and public – what do results mean in practical terms

Q4: Changes to policy, governance and science administration

- Quick wins – achievable within the next 6 – 12 months
  - Construction of a knowledge inventory for each LME
  - NOAA Fisheries Website
  - Seminar series
  - NCEAS-style workshop
  - Paid sabbaticals
  - Formalize partnerships across centers of excellence

Q4: Changes to policy, governance and science administration

- Required Changes
  - Change 1: Permanent funding
  - Change 2: Better Communication (within NOAA Fisheries, within government agencies, with academia and NGOs)
  - Change 3: Formalized Partnerships